

National Aeronautics and Space Administration

Fleet Alternative Fuel Vehicle Program Fleet Report for FY 2012

February 15, 2013

This National Aeronautics and Space Administration (NASA) Fleet Alternative Fuel Vehicle (AFV) Report for Fiscal Year (FY) 2012 presents the Agency's data on the number of AFVs acquired in FY 2012 and its planned and projected acquisition for FY 2013, FY 2014 and FY 2015. This report has been developed in accordance with the Energy Policy Act of 1992 (EPAct) (42 U.S.C. 13211-13219) as amended by the Energy Conservation Reauthorization Act of 1998 (Public Law 105-388) (ECRA), Energy Policy Act of 2005 (EPAct), Executive Order (E.O.) 13423 (signed by the President in January 2007) and E.O. 13514 (signed by the President in October 2009).

Legislative Requirements

EPAct requires that 75 percent of all covered light-duty vehicles acquired for Federal fleets in FY 1999 and beyond must be AFVs (where the fleets have 20 or more vehicles, are capable of being centrally fueled, and are operated in a Metropolitan Statistical Area (MSA) with a population of more than 250,000 based on the 1980 census). Certain emergency, law enforcement, and national defense vehicles are exempt from this requirement. In January 2007, President Bush signed E.O. 13423 which strengthened the mandate and requires agencies with 20 or more vehicles in the United States to decrease petroleum consumption by 2% per year relative to their fiscal year (FY) 2005 baseline through FY 2015. E.O. 13423 also requires agencies to increase alternative fuel use by 10% per year relative to the previous year. In October 2009, President Obama signed E.O. 13514, which extends the requirement for reduction of petroleum use by 2% annually through FY 2020.

NASA Approach to Compliance with EPAct, E.O. 13423 and E.O. 13514

To achieve compliance with the legislative mandates of EPAct, E.O. 13423 and E.O. 13514, NASA has developed an aggressive compliance strategy including the acquisition of 75 percent of new, covered light-duty vehicles as AFVs, and use of alternative fuel in these vehicles a majority of the time. NASA will also continue to acquire light-duty vehicles with higher fuel efficiency, and further reduce petroleum consumption by using biodiesel fuel in most diesel vehicles where available. NASA recognizes that AFV fueling infrastructure is extremely limited in most areas of the country. As such, NASA has developed AFV fueling infrastructure at those NASA Centers where it is not readily commercially available, and justified by usage volumes; while mindful of the cost to the American people.

NASA Fleet Compliance for FY 2012

NASA acquired 216 light-duty vehicles (LDVs) during FY 2012, of which 57 were considered EPC covered acquisitions and 172 were AFVs. For the LDV acquisitions NASA received 159 EPC credits. NASA also gained 47 credits for biodiesel fuel use and the acquisition of dedicated light, medium, and heavy-duty AFVs. In total NASA attained 206 credits, thereby exceeding EPC requirements by 286 percentage points.

Summary of NASA's FY 2012 AFV Acquisitions

A number of vehicles that were leased and purchased by NASA were not "covered" vehicles. Of the total of 216 light-duty vehicles acquired in FY 2012, the following were not counted for compliance:

- 7 Low Speed Electric Vehicles (LSEVs) were exempt as "non-covered vehicle(s)"; LSEVs are recorded within FAST, but LSEVs do not meet the definition of a vehicle per E.O.s, therefore the acquisition of such a vehicle does count towards the EPC compliance percentage.
- 2 were exempt as "non-MSA operation"; vehicles housed within a fleet assigned within an MSA, but the vehicles performs 51% (or more) of the functional duties outside the MSA.
- 144 were exempt due to geographic assignment; the vehicles are housed outside of a MSA.
- 11 were exempt as Law Enforcement vehicles.

NASA's Fleet AFV Acquisitions for FY 2013, FY 2014 and FY 2015

Below is the detailed information on planned and projected vehicle acquisitions for NASA in FY 2012, 2013 and 2014.

2012 AFV Report: Planned Data (FY2013)

1. Planned Light-Duty Vehicle Acquisitions and Exemptions			
	Acquisitions		
	Leased	Purchased	Total
Total Light-Duty Vehicle Acquisitions	407	11	418
Fleet Exemptions: Fleet Size	0	0	0
Fleet Exemptions: Foreign	0	3	3

Fleet Exemptions: Geographic	124	8	132
Fleet Exemptions: Non-MSA Operation	0	0	0
Vehicle Exemptions: LE Vehicle	16	0	16
Vehicle Exemptions: Non-covered Vehicle	0	0	0
Vehicle Exemptions: Non-MSA Operation	3	0	3
Total EAct-Covered Vehicles	264	0	264

2. Planned Alternative Fuel Vehicle Acquisition Detail

Vehicle Type	Fuel	LE	Acquisitions			Total	EPAct Credits
			Lease	Purchase			
Light Duty Vehicles							
Sedan/St Wgn Compact	E85 FF	No	75	0		75	75
Sedan/St Wgn Compact	E85 FF	Yes	4	0		4	0
Sedan/St Wgn Compact	GAS AF	No	12	0		12	12
Sedan/St Wgn Compact	GAS HY ³	No	6	0		6	6
Sedan/St Wgn Midsize	E85 FF	No	26	0		26	26
Sedan/St Wgn Midsize	E85 FF	Yes	6	0		6	0
Sedan/St Wgn Subcompact	CNG DE	No	14	0		14	14
Sedan/St Wgn Subcompact	GAS AF	Yes	1	0		1	0
LD Minivan 4x2 (Cargo)	E85 FF	No	22	1		23	23
LD Minivan 4x2 (Passenger)	E85 FF	No	57	6		63	63
LD Minivan 4x2 (Passenger)	GAS AF	No	5	0		5	5
LD Pickup 4x2	CNG BI	No	7	0		7	7
LD Pickup 4x2	E85 FF	No	69	0		69	69
LD Pickup 4x2	GAS AF	No	7	0		7	7

LD SUV 4x2	E85 FF	No	14	0	14	14
LD SUV 4x2	E85 FF	Yes	1	0	1	0
LD SUV 4x2	GAS AF	No	2	0	2	2
LD SUV 4x2	GAS AF	Yes	3	0	3	0
LD Van 4x2 (Cargo)	E85 FF	No	14	0	14	14
LD Van 4x2 (Passenger)	E85 FF	No	10	0	10	10
LD Van 4x2 (Passenger)	GAS AF	No	2	0	2	2
LD Minivan 4x4 (Cargo)	GAS AF	No	0	1	1	1
LD Pickup 4x4	CNG DE	No	2	0	2	2
LD Pickup 4x4	E85 FF	No	9	0	9	9
LD SUV 4x4	E85 FF	No	29	0	29	29
LD SUV 4x4	E85 FF	Yes	3	0	3	0
LD SUV 4x4	GAS AF	No	5	0	5	5
Medium Duty Vehicles						
MD Other	E85 FF	No	32	0	32	32
MD Pickup	CNG BI	No	1	0	1	1
MD Pickup	E85 FF	No	43	0	43	43
MD SUV	GAS AF	No	1	0	1	1
MD Van (Cargo)	CNG BI	No	4	0	4	4
MD Van (Cargo)	CNG DE	No	1	0	1	1
MD Van (Cargo)	E85 FF	No	43	1	44	44
MD Van (Passenger)	CNG BI	No	6	0	6	6
MD Van (Passenger)	E85 FF	No	10	1	11	11
MD Van (Passenger)	GAS AF	No	2	0	2	2
Totals:			548	10	558	540

3. Planned EAct Acquisition Credits Summary

Base AFV Acquisition Credits:	540
Zero Emission Vehicle (ZEV) Credits:	0
Dedicated Light Duty AFV Credits:	16
Dedicated Medium Duty AFV Credits:	2
Dedicated Heavy Duty AFV Credits:	0
Biodiesel Fuel Usage Credits: ⁴	7
Total EAct Credits:	565
Overall EAct Compliance Percentage:	214 %

2012 AFV Report: Projected Data (FY2014)

1. Projected Light-Duty Vehicle Acquisitions and Exemptions

	Acquisitions		
	Leased	Purchased	Total
Total Light-Duty Vehicle Acquisitions	202	5	207
Fleet Exemptions: Fleet Size	0	0	0
Fleet Exemptions: Foreign	0	3	3
Fleet Exemptions: Geographic	78	2	80
Fleet Exemptions: Non-MSA Operation	0	0	0
Vehicle Exemptions: LE Vehicle	23	0	23
Vehicle Exemptions: Non-covered Vehicle	0	0	0
Vehicle Exemptions: Non-MSA Operation	1	0	1
Total EAct-Covered Vehicles	100	0	100

2. Projected Alternative Fuel Vehicle Acquisition Detail

Vehicle Type	Fuel	LE	Acquisitions	EAct
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				Lease	Purchase	Total
Light Duty Vehicles						
Sedan/St Wgn Compact	E85 FF	No	31	0	31	31
Sedan/St Wgn Compact	E85 FF	Yes	3	0	3	0
Sedan/St Wgn Compact	GAS AF	No	2	0	2	2
Sedan/St Wgn Compact	GAS HY ³	No	3	0	3	3
Sedan/St Wgn Large	GAS AF	Yes	4	0	4	0
Sedan/St Wgn Midsize	E85 FF	No	2	0	2	2
Sedan/St Wgn Midsize	E85 FF	Yes	13	0	13	0
Sedan/St Wgn Subcompact	E85 FF	No	7	0	7	7
LD Minivan 4x2 (Cargo)	E85 FF	No	1	0	1	1
LD Minivan 4x2 (Passenger)	CNG BI	No	3	0	3	3
LD Minivan 4x2 (Passenger)	E85 FF	No	22	2	24	24
LD Minivan 4x2 (Passenger)	E85 FF	Yes	1	0	1	0
LD Minivan 4x2 (Passenger)	GAS AF	No	1	0	1	1
LD Pickup 4x2	CNG BI	No	3	0	3	3
LD Pickup 4x2	E85 FF	No	43	0	43	43
LD Pickup 4x2	GAS AF	No	2	0	2	2
LD SUV 4x2	E85 FF	No	3	0	3	3
LD SUV 4x2	E85 FF	Yes	1	0	1	0
LD SUV 4x2	GAS HY ³	No	1	0	1	1
LD Van 4x2 (Cargo)	E85 FF	No	16	0	16	16
LD Van 4x2 (Passenger)	E85 FF	No	21	0	21	21
LD Van 4x2 (Passenger)	GAS AF	No	5	0	5	5
LD Pickup 4x4	E85 FF	No	3	0	3	3
LD SUV 4x4	E85 FF	No	7	0	7	7

LD SUV 4x4	E85 FF	Yes	2	0	2	0
LD SUV 4x4	GAS AF	No	1	0	1	1
LD SUV 4x4	GAS HY ³	No	1	0	1	1
Medium Duty Vehicles						
MD Other	E85 FF	No	20	1	21	21
MD Pickup	E85 FF	No	7	0	7	7
MD Van (Cargo)	E85 FF	No	12	0	12	12
MD Van (Passenger)	E85 FF	No	2	0	2	2
Totals:			243	3	246	222

3. Projected EPart Acquisition Credits Summary

Base AFV Acquisition Credits:	222
Zero Emission Vehicle (ZEV) Credits:	0
Dedicated Light Duty AFV Credits:	0
Dedicated Medium Duty AFV Credits:	0
Dedicated Heavy Duty AFV Credits:	0
Biodiesel Fuel Usage Credits: ⁴	7
Total EPart Credits:	229
Overall EPart Compliance Percentage:	229 %

2012 AFV Report: Forecast Data (FY2015)

1. Forecast Light-Duty Vehicle Acquisitions and Exemptions

	Acquisitions		
	Leased	Purchased	Total
Total Light-Duty Vehicle Acquisitions	162	9	171
Fleet Exemptions: Fleet Size	0	0	0

Fleet Exemptions: Foreign	0	3	3
Fleet Exemptions: Geographic	83	6	89
Fleet Exemptions: Non-MSA Operation	0	0	0
Vehicle Exemptions: LE Vehicle	10	0	10
Vehicle Exemptions: Non-covered Vehicle	0	0	0
Vehicle Exemptions: Non-MSA Operation	27	0	27
Total EAct-Covered Vehicles	42	0	42

2. Forecast Alternative Fuel Vehicle Acquisition Detail

Vehicle Type	Fuel	LE	Acquisitions			Total	EPA Credits
			Lease	Purchase			
Light Duty Vehicles							
Sedan/St Wgn Compact	E85 FF	No	12	0	12	12	
Sedan/St Wgn Compact	E85 FF	Yes	4	0	4	0	
Sedan/St Wgn Compact	GAS HY ³	No	3	0	3	3	
Sedan/St Wgn Midsize	E85 FF	Yes	5	0	5	0	
Sedan/St Wgn Subcompact	E85 FF	No	1	0	1	1	
Sedan/St Wgn Subcompact	GAS AF	No	1	0	1	1	
LD Minivan 4x2 (Cargo)	E85 FF	No	3	2	5	5	
LD Minivan 4x2 (Passenger)	E85 FF	No	34	1	35	35	
LD Minivan 4x2 (Passenger)	GAS AF	No	2	0	2	2	
LD Other 4x2	GAS AF	No	2	0	2	2	
LD Pickup 4x2	CNG BI	No	1	0	1	1	
LD Pickup 4x2	E85 FF	No	42	1	43	43	
LD SUV 4x2	E85 FF	No	3	0	3	3	

LD SUV 4x2	GAS AF	Yes	1	0	1	0
LD SUV 4x2	GAS HY ³	No	2	0	2	2
LD Van 4x2 (Cargo)	E85 FF	No	3	1	4	4
LD Van 4x2 (Cargo)	LPG BI	No	1	0	1	1
LD Van 4x2 (Passenger)	E85 FF	No	12	0	12	12
LD Pickup 4x4	CNG BI	No	1	0	1	1
LD Pickup 4x4	E85 FF	No	11	1	12	12
LD Pickup 4x4	GAS AF	No	1	0	1	1
LD SUV 4x4	E85 FF	No	13	0	13	13
LD SUV 4x4	GAS HY ³	No	2	0	2	2
Medium Duty Vehicles						
MD Other	E85 FF	No	4	0	4	4
MD Pickup	E85 FF	No	8	0	8	8
MD SUV	E85 FF	No	1	0	1	1
MD Van (Cargo)	E85 FF	No	21	3	24	24
MD Van (Passenger)	E85 FF	No	5	0	5	5
Totals:			199	9	208	198

3. Forecast EPAct Acquisition Credits Summary

Base AFV Acquisition Credits:	198
Zero Emission Vehicle (ZEV) Credits:	0
Dedicated Light Duty AFV Credits:	0
Dedicated Medium Duty AFV Credits:	0
Dedicated Heavy Duty AFV Credits:	0
Biodiesel Fuel Usage Credits: ⁴	7
Total EPAct Credits:	205

Overall EPA Act Compliance Percentage:

488 %

Petroleum Savings

Since it is difficult, to project petroleum savings in out years, only actual data is provided for FY 2012. E.O. 13423 established NASA baseline in FY 2005. NASA by E.O. 13423 and E.O. 13514 mandates a 2 percent reduction of petroleum use annually through FY 2020.

Covered Petroleum Consumption in GGE								
	Baseline FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Gasoline		770,847	833,580	888,044	733,068	731,890	713,484	548,099
Diesel		301,097	316,600	337,152	285,541	212,193	115,596	94,983
B20*		99,860	99,209	30,766	63,969	82,890	208,837	201,475
Total	1,277,165	1,171,804	1,249,389	1,255,962	1,082,578	1,026,973	1,037,917	844,557
Target		1,251,621	1,226,078	1,200,535	1,174,991	1,149,448	1,123,905	1,098,361
Compliant		Yes	No	No	Yes	Yes	Yes	Yes

* B20 is the diesel component from covered biodiesel consumption.

Alternative Fuel Use by NASA in FY 2012.

New alternative fuel use baselines were derived from FY 2005 data. By mandate of E.O. 13423, NASA is required to increase alternative fuel use by 10 percent annually.

The majority of vehicles acquired by NASA and other federal fleets are leased from GSA. These leases include maintenance and fuel costs for the vehicles. Annual usage for the Agency is determined through the use of a GSA credit card to purchase alternative fuel. However, since product code standards are not uniform among suppliers of alternative fuels (e.g. ethanol or E-85), it is difficult for credit vendors to determine the specific fuel purchased. The exception may be natural gas, which is usually purchased at local utility refueling sites, which allows fleets to contact the utility for an accurate accounting of purchased fuel. Alternative fuel use data is approximated from proportioning GSA data and internal record keeping efforts.

Alternative Fuel Consumption in GGE								
	Baseline							
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
CNG		15,760	32,052	14,850	11,912	11,900	7,479	6,908
LNG		0	0	0	0	0	0	0
LPG		10,661	10,237	7,264	7,664	5,521	3,380	358
E-85		199,239	231,789	234,683	241,273	236,665	198,374	270,358
Electric		0	0	0	0	0	2,348	2,322
M-85		0	0	0	0	0	0	0
B100*		29,017	29,325	21,625	19,101	21,777	52,495	53,316
Hydrogen		0	0	0	0	0	0	0
Total	148,723	254,677	303,403	278,422	279,950	275,863	264,076	333,262
Target		163,595	179,954	197,950	217,745	239,519	263,471	289,819
Compliant		Yes	Yes	Yes	Yes	Yes	Yes	Yes

*B100 is calculated at 20% of the reported B20 and 100% of the reported B100 fuel used in the Section 3 Actual Fuel Cost/Consumption by Fuel Type data input screen.

Summary

As detailed in this report and the attachments, NASA exceeded the AFV acquisition requirements of EPOA in FY 2012 and projects to repeat this accomplishment in FYs 2013, 2014 and 2015. In addition, NASA fleets were able to meet the goal of annual fleet petroleum consumption in FY 2012.

NASA expects a reduction in fleet size in FY 2013 as the shuttle programs officially retires, which will further reduce petroleum consumption as well as alternative fuel consumption.